

Volkswagen Cabriolet

K-Jetronic Injection System Relay Guide

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Rev Limiters

Factory Relays:

- Relays 059D, E, and F are functionally all the same; each letter simply superseded the previous version, with E appearing to have been a North America-only relay.
- There is conflicting information about whether relays 059D, E, F are high rev or no rev limit. Considering rev limit is a safety feature, and many (if not all) of those without a relay rev limiter had rev limit distributor rotors (which no fuel injected Cabriolet came with), this guide is erring on the side of all of these relays having a rev limiter, which ranges from around 6300 to 8000 rpm, depending on the relay.
- Relays 059G and H have lower rev limits than their predecessors, which coincides with the introduction of hydraulic lifter cylinder heads.
- You will find that the 059G and 059H relays (in aftermarket form) are what most parts stores are selling as replacements for D, E, F, because Volkswagen itself superseded F with G, potentially out of safety concerns.

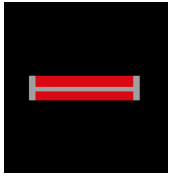
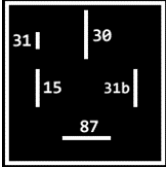
Aftermarket Relays:

- Rev limits are manufacturer-specific and are listed where available. If rev limits are not listed, the presumed rev limit would be between 6000 and 7000 RPM.

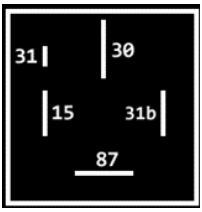
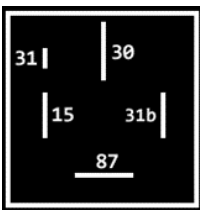
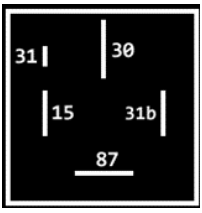
Notes

- All K-Jetronic fuel pump relays for 1983-1993 Cabriolets** (and first generation Jettas) **are interchangeable**. For example, if your original relay is 321906059D, you can replace it with 321906059G and vice versa. Therefore, replacement relays listed and shown on pages 3-4 are not year-specific. The VW suffix is listed under some aftermarket relays for cross-reference purposes only.
 - All of the above relays utilize a 555 timer to activate the fuel pump(s) for 2-3 seconds; if no coil signal, the relay cuts power to the pump(s).
- Factory relays on may differ slightly in their manufacturer markings from what your car has/had. All will have the white number stamped on top, from 1983-1993.
- Equivalent Audi numbers: 443907385A, 443907385G, 443907385H
- Discontinued aftermarket relays:
 - JP Group #1199207600
 - Topran #107259015 / Hella #4RP 008 189-061 (059H)
- "Inrush current of a fuel pump is 5x - 7x the run current." This means that a Cabriolet's inrush current can be upwards of 50 amps. Given that Kracker has a published inrush max load of 70 amps, it is recommended that you find one of the Kracker relays listed below. The other relays do not specify whether their max amp rating is for inductive line load or inrush load.
 - An inductive load needs a flyback diode.
- Relay terminal designations:
 - 1, 31b = Ignition coil, ignition distributor – low voltage RPM pulsed ground signal (same as the tachometer signal)
 - 15 = Switched 12V from ignition switch
 - 30 = 12V input from battery (+) terminal
 - 31 = Ground from battery (-) terminal, or chassis
 - 87 = 12V output to fuel pump(s)

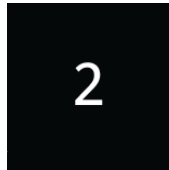
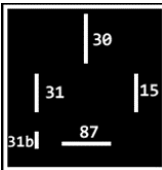
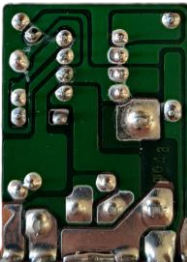
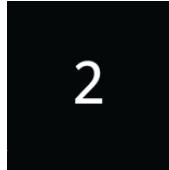
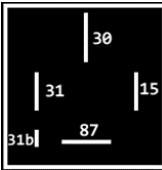
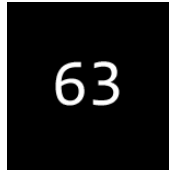
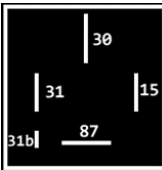
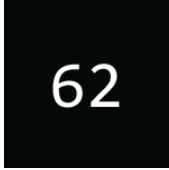
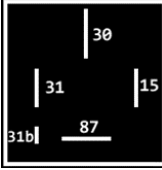
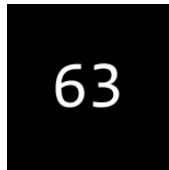
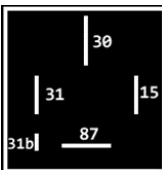
Factory-Installed Fuel Pump Relay | 1979-1982

Engines	Part Number	Cover - Side	Circuit Board		Cover - Top	Pin Layout
 1.6L EG 1.6L EJ 1.7L EN	321-906-059C Rev limit: 7000+ Line load: 10A inductive		 Image Unavailable	 Image Unavailable		

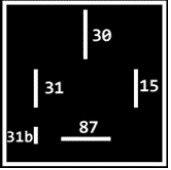
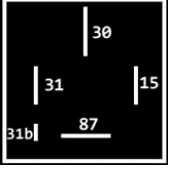
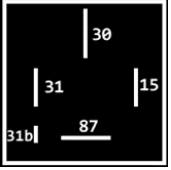
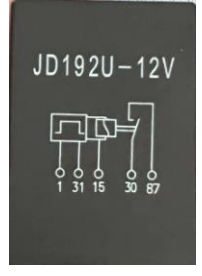
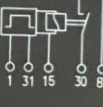
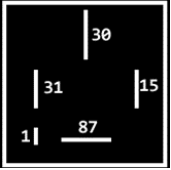
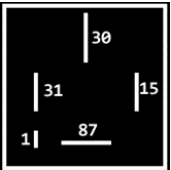
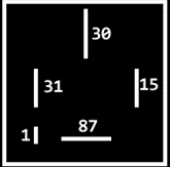
Replacement Fuel Pump Relays | 1979-1982

Brand	Part Number	Cover - Side	Circuit Board		Pin Layout
	3.300.100 Rev limit: ? Inductive load: 10A		 Image Unavailable	 Image Unavailable	
	89 6321 000 Rev limit: ? Inductive load: 10A		 Image Unavailable	 Image Unavailable	
	4RP 009 118-011 Rev limit: ? Inductive load: ?		 Image Unavailable	 Image Unavailable	

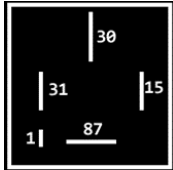
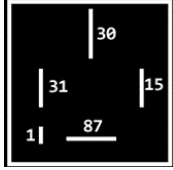
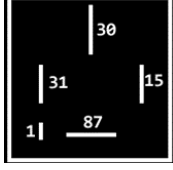
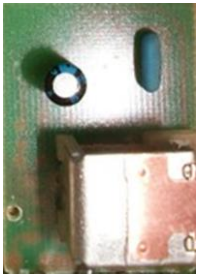
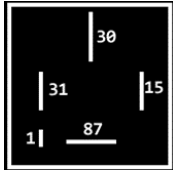
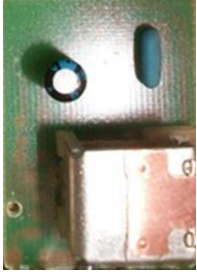
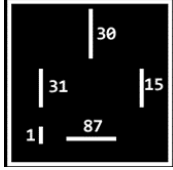
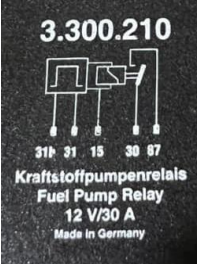
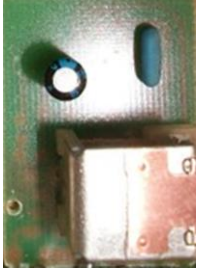
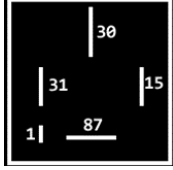
Factory-Installed Fuel Pump Relays | 1983-1993

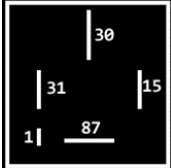
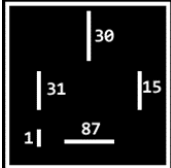
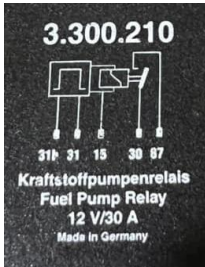
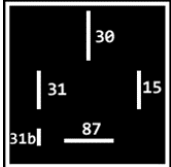
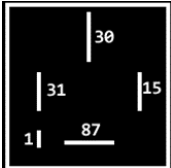
Engines	Part Number	Cover - Side	Circuit Board		Cover - Top	Pin Layout
1983 – 1985						
 1.7L EN 1.8L DX 1.8L JH 1.8L JJ 1.8L KT	321-906-059D Rev limit: 7000+ Line load: 10A inductive	 321906059D SHO 89 63 75 made in W-Germany 12Vmax10Aind	 Image Unavailable	 Image Unavailable	 2	
1986 – 1987						
 1.8L JH	321-906-059E Rev limit: 7000+	 321906059E SJR 12V 24.3700.00 Made in Germany			 2	
 1.8L DX 1.8L JH 1.8L KT	321-906-059F Rev limit: 8000 40A	 321906059F TPK GERMANY KPR-12V 275 143			 63	
1988 – 1993						
 1.8L JH	321-906-059G Rev limit: 6500 40A	 321906059G TPK GERMANY KPR-12V 275 144		 Image Unavailable	 62	
 1.8L DX 1.8L JH 1.8L KT	321-906-059F Rev limit: 8000 40A	 321906059F TPK GERMANY KPR-12V 275 143			 63	

Replacement Fuel Pump Relays | 1983-1993

Brand	Part Number	Cover - Side	Circuit Board		Pin Layout
	24.1400.20 (059D, E, F) RECOMMENDED Rev limit: 8220 Line load: 15A inductive Max inrush load: 70A	 KRÄCKER AG 24.1400.20 Kraftstoffpumpenrelais mit Drehzahlbegrenzung 12V Made in Germany >PA66-GF30<			
	24.1400.30 (059G, H) RECOMMENDED Rev limit: 6540 Line load: 15A inductive Max inrush load: 70A	 KRÄCKER AG 24.1400.30 Kraftstoffpumpenrelais mit Drehzahlbegrenzung 12V Made in Germany >PA66-GF30<	 Image Unavailable	 Image Unavailable	
	24.1400.40 (059G, H) RECOMMENDED Rev limit: 6300 Line load: 15A inductive Max inrush load: 70A	 KRÄCKER AG 24.1400.40 Kraftstoffpumpenrelais mit Drehzahlbegrenzung 12V Made in Germany >PA66-GF30<	 Image Unavailable	 Image Unavailable	
 Also sold under Intermotor & BWD brands	STD: RY197 BWD: R3023 NOT RECOMMENDED Old stock relay sold by RockAuto.com Rev limit: reports of cutting out at 3000 Max load: 30A	 JD192U-12V 			
 Also sold under Intermotor, BWD, NAPA & Carquest brands	RY197 RY-197 RECOMMENDED Rev limit: ? Max load: 30A	 TU-12490-24 22242			
 Repackaged Standard Motors relay	19204 RLYA634 RECOMMENDED Rev limit: ? Max load: 30A	 TU-12490-24 22334			

1983-1993 continued

Brand	Part Number	Cover Side	Circuit Board		Pin Layout
	4RP 008 189-081 (059D, E, F) Rev limit: ? Max load: 30A				
	4RP 008 189-091 (059G) Rev limit: ? Max load: 40A				
 Manufactured by Hella	103420755 (059D, E, F) Rev limit: ? Max load: 30A				
	3.300.230 (059H) NOT RECOMMENDED See page 7 Rev limit: 6600 Max load: 30A				
	3.300.220 (059G) NOT RECOMMENDED See page 7 Rev limit: ? Max load: 30A				
	3.300.210 (059D, E, F) NOT RECOMMENDED See page 7 Rev limit: ? Max load: 30A				

1983-1993 continued					
Brand	Part Number	Cover Side	Circuit Board		Pin Layout
	4634 or 4812 (321906059F, 321906059H, 443907385) Rev limit: ? Max load: ?				
 Manufactured by Hitachi	132022 or 132023 Rev limit: ? Max load: ?				
 Also sold under Airtex brand	1R1003 (repackaged KAE) (059D, E, F) NOT RECOMMENDED See page 7 Rev limit: ? Max load: 30A				
 Also sold under Airtex brand	1R1243 (stamped with 65) (059H) Rev limit: ? Max load: 30A				
	935VG0090	Repackaged Hella relay			
	V15-71-0014	Repackaged KAE and Kracker relays; which one you get depends on supplier			
	75614033	Repackaged Kracker relay			
	R3023	Repackaged Standard Motors relay Note: Rock Auto shows this as being a KAE and has shipped KAE inside a BWD box.			
	600494	Repackaged KAE			

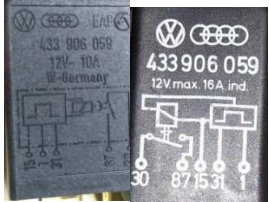
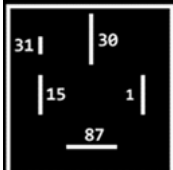
Relay 059G & Hella 091 circuit board images courtesy of Jon C.

Fuel Pump Relay – Westmoreland Rabbits

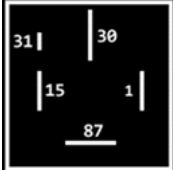
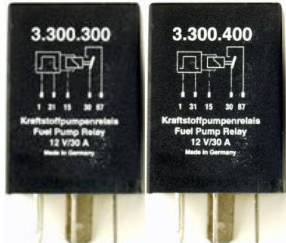
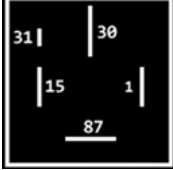
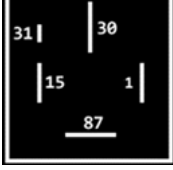
USA-Built Rabbits ONLY. Does NOT apply to ANY Cabriolets or first generation Jettas.

Since this guide has been linked to for USA-built Rabbits, below is fuel pump relay info for those cars. The Westmoreland Rabbit hatchback and Rabbit Truck utilize a Chrysler relay panel and an Audi 4000/5000 fuel pump relay:

Factory-installed Fuel Pump Relay

Engines	Part Number	Cover - Side	Circuit Board	Cover - Top	Pin Layout
1981 - 1984					
 1.7L EN 1.8L JH	433-906-059 Rev limit: ? Line load: ?				

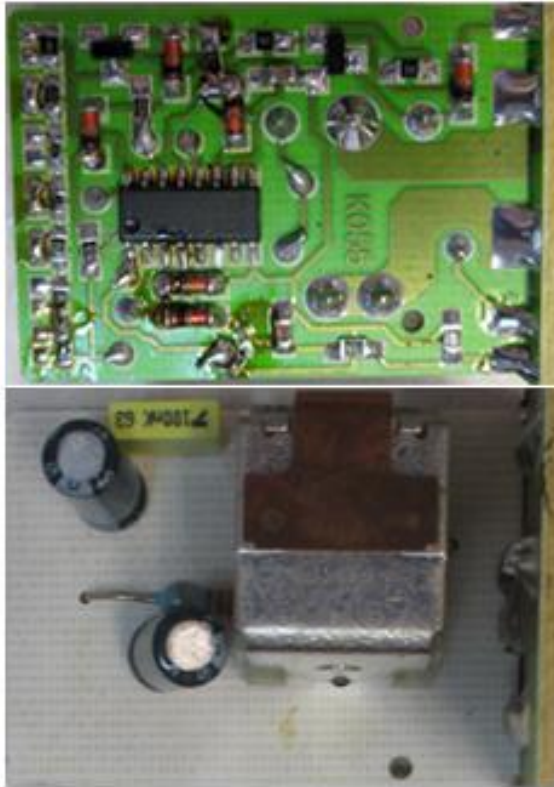
Replacement Fuel Pump Relays

Brand	Part Number	Cover - Side	Circuit Board	Circuit Board	Pin Layout
	75614031				
	3.300.300 Or 3.300.400				
	24.1000.10				

Any of the relays on page 2, but will have an added fuse that the original did not.

! Warning !

All KAE (Kaehler) fuel pump relays for 1983-1993 K-Jetronic Cabriolets & first generation Jettas are being manufactured with the incorrect circuit board. **For North American owners, it is highly recommended that you not waste your money and time buying KAE relays. If you bought and/or recently installed a KAE relay and your car doesn't start, or will not stay running after start-up, or has issues at speed, remove your KAE relay and check the circuit board:**



K055

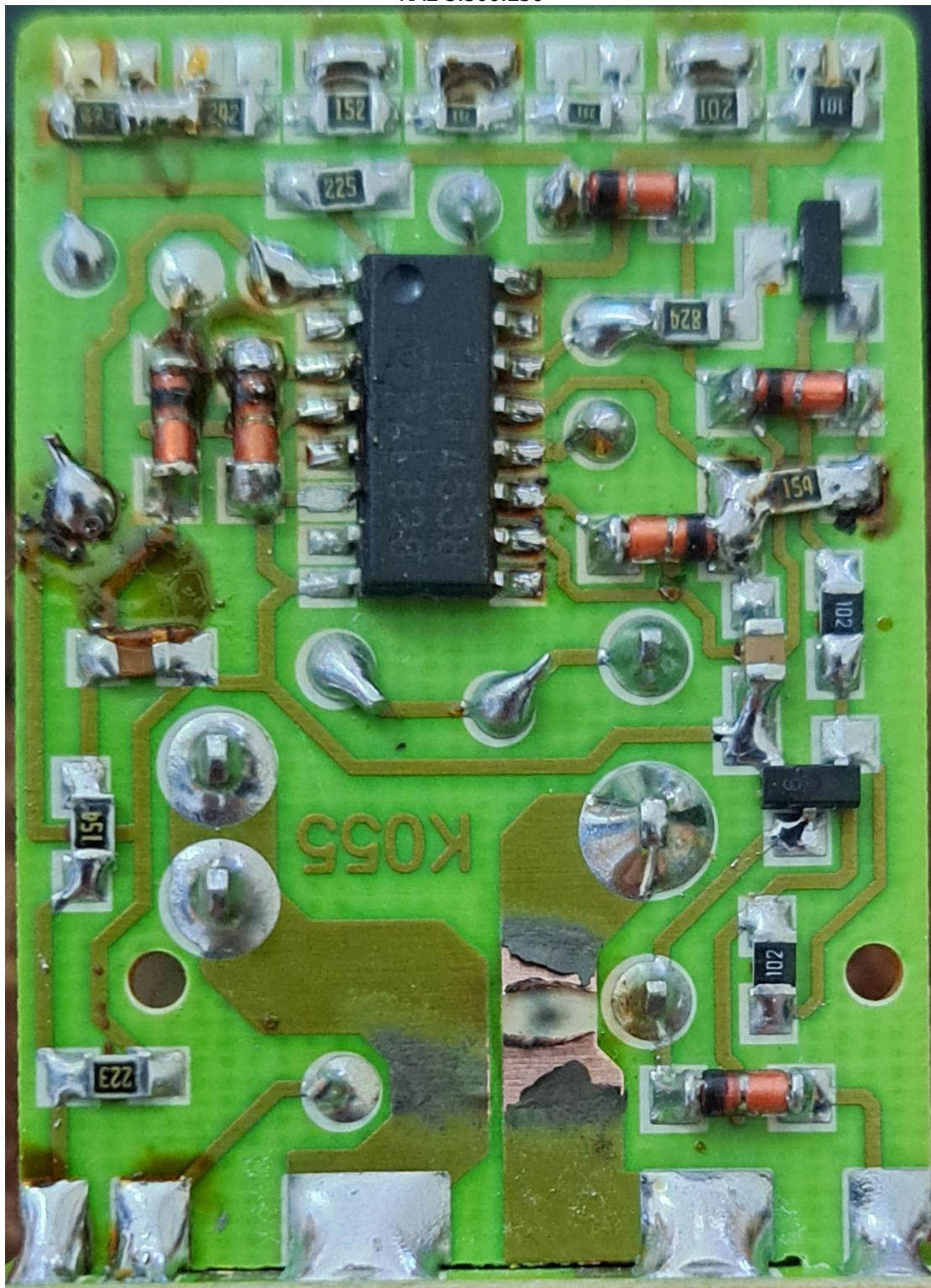


K056

If the car is having running issues, also closely check the circuit board for damage: cracked solder, melted solder, burn marks, broken copper tracks, burned diodes, etc., all of which can be seen on the next page.

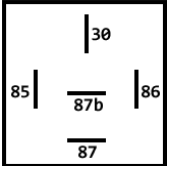
Example of a burned-up fuel pump relay

KAE 3.300.230

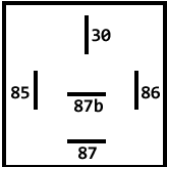
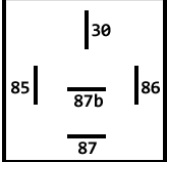
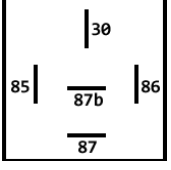


Fuel Injection Power Supply/Lambda Relay

Factory-installed Lambda Relay | 1979-1993

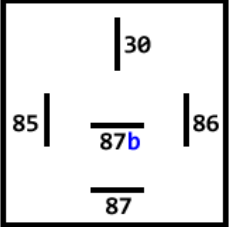
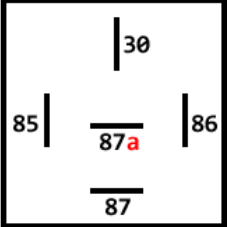
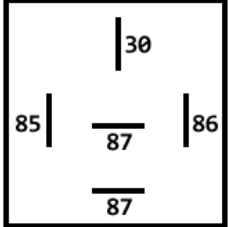
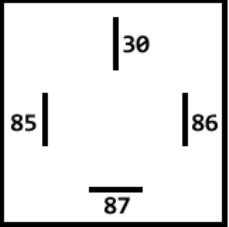
Engines	Part Number	Cover - Side	Circuit Board		Cover - Top	Pin Layout
 All, with lambda control	171-906-381 431-951-253C					

Replacement Lambda Relays | 1979-1993

Brand	Part Number	Cover - Side	Circuit Board		Pin Layout
 BOSCH	0332015006				
	ECH AR289				
	7M0-951-253				

IMPORTANT NOTE

The lambda relay **MUST** have the correct pin layout:

 	 	 	 
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